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A New Species of the Genus *Pedetontus* from Japan (Insecta, Thysanura)*

With 30 Text-figures

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ABSTRACT A new species of the genus *Pedetontus* Silvestri from Japan, *Pedetontus unimaculatus* sp. nov., is described and illustrated.

The genus *Pedetontus* Silvestri is one of the commonest machilidan groups in Japan and its vicinities. Six *Pedetontus* species were described from Japan (Silvestri, 1943; Uchida, 1960), three species from Formosa (Silvestri, 1943), and one species from Korea (Silvestri, 1943). The present paper deals with the description of one new species from central Japan.

Pedetontus unimaculatus sp. nov.

Approximate length of body in male, 12–13 mm; in female, 13–14 mm. Ratio to body length; antenna, 1.6 maximum observed; caudal filament, 1.6 maximum observed; cercus, 0.6. General body color yellowish white; reddish brown hypodermal pigment present on head, bases of antennae, maxillae, maxillary palps, mandibles, legs and labial palps; pigmentation pattern more or less variable in individuals. Typical pattern formed by scales as shown in Fig. 1; solid black spot on tergum IX.

Frons with 4 strong setae. Central portion of clypeus not scaled and pigmented, provided with many long hairs. Hypodermal pigmentation on head as shown in Fig. 2. Eye large, convex, greenish gray, and speckled with dark. Ratio of length/width, 1; line of contact/length 0.6. Ocelli reddish brown, pistilliform, their width equal to 6/7 of that of eye (Fig. 3). Antennae of male thicker than those of female. Scapus about twice as long as wide. Scapus and pedicellus pigmented as shown in Fig. 4. Flagellum brownish, darker toward apex. Apical portion of

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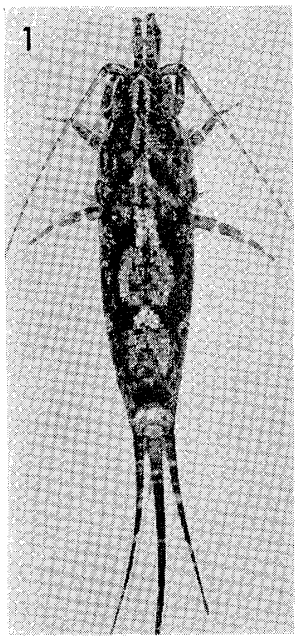

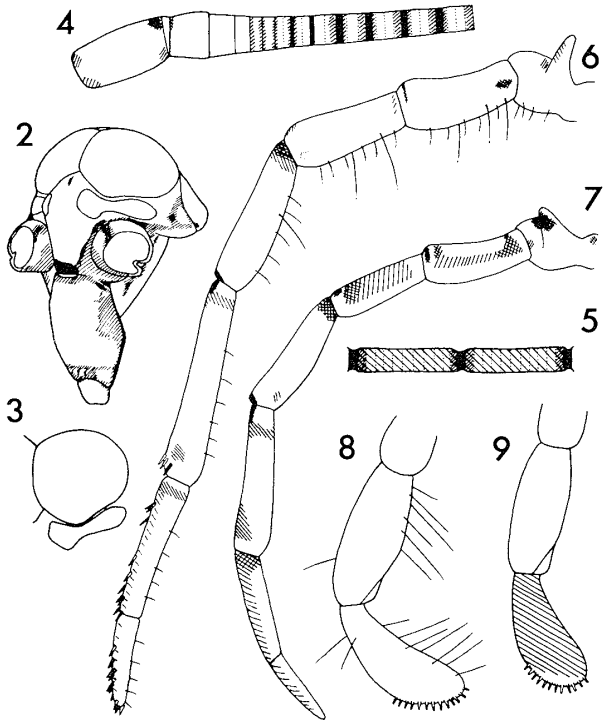

Figs. 1–9. *Pedetontus unimaculatus* sp. nov. —— 1. Photograph showing scale pattern. —— 2. Head, laterofrontal view. —— 3. Eye and ocellus, sublateral view. —— 4. Diagram showing pigmentation on basal portion of antenna. —— 5. Ditto, on median portion of antenna. —— 6. Maxillary palp, male; with suberect slender setae only on undersurface, spine-like setae and hypodermal pigmentation. —— 7. Maxillary palp, female; with hypodermal pigmentation. —— 8. Labial palp, male; with suberect slender setae and sensory cones. —— 9. Labial palp, female; with hypodermal pigmentation and sensory cones.

flagellum uniformly brown, pigmentation pattern on basal and median portions of flagellum as diagramed in Figs. 4–5. Flagellum divided into 36 articles maximum observed. Apical articles divided into 10–24 subarticles, usually 13–18. Pigmentation of mandibles as in Fig. 10. Mandible four-toothed (Fig. 11). Pigmentation of maxilla in female as shown in Fig. 12, that in male restricted in extension except on galea. Shape of maxillary palp of male as shown in Fig. 6, that of female as shown in Fig. 7. Last segment about 2/3 as long as penultimate in both sexes. Segments II–V of maxillary palp scaled densely, segments I, VI and VII sparsely. Pigmentation of maxillary palps approximately as shown in Figs. 6–7; pigmentation on uppersurface of apical portion of segment IV conspicuous in both sexes. Maxillary palps of both sexes provided with setae; generally those in segments VI and VII more than in segments I–V in number. Undersurface of segment IV in male with many long and more or less slender setae, but in female setae rather few. Undersurface with one to three major slender suberect setae on each of segments II and III in both sexes and further on segment IV in male. Minor suberect setae

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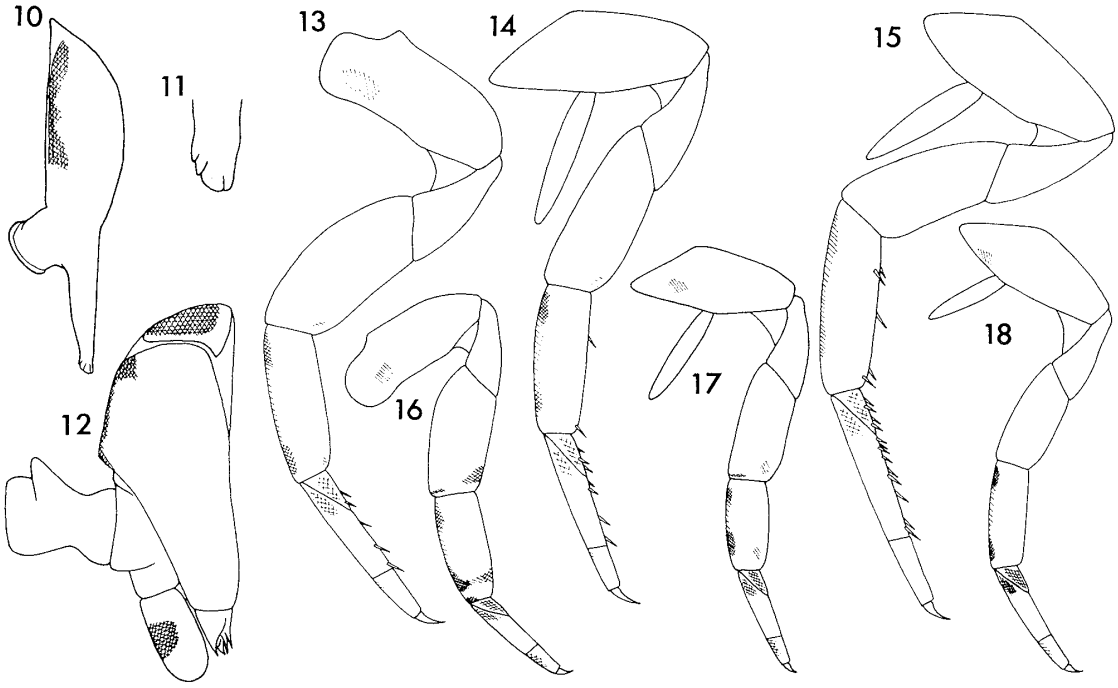

Figs. 10–18. *Pedetontus unimaculatus* sp. nov. —— 10. Mandible, with hypodermal pigmentation. —— 11. Apical portion of mandible. —— 12. Maxilla, female; with hypodermal pigmentation. —— 13. Fore leg, male; with hypodermal pigmentation and spine-like setae. —— 14. Mid leg, male; ditto. —— 15. Hind leg, male; ditto. —— 16. Fore leg, female; with hypodermal pigmentation. —— 17. Mid leg, female; ditto. —— 18. Hind leg, female; ditto.

widely spaced in each segment of maxillary palps in both sexes; but in female less than in male in number, on undersurface of segments V-VII often limited to male. Spine-like setae present on uppersurface of segments VI, VII and apical portion of segment V in both sexes. Shape and pigmentation of labial palp of female as shown in Fig. 9. Shape of labial palp of male as shown in Fig. 8, its pigmentation less intensive than of female. Each segment of labial palps sparsely scaled in both sexes. Apical portion of labial palp with numerous sensory cones in both sexes. Long suberect setae present in last and penultimate segments of labial palp in male, but absent in female.

Shape and hypodermal pigmentation of legs as shown in Figs. 13–18. Tarsi III, I and proximal portion of tarsus II dark in male, less intensive in female. Number of spine-like setae in fore leg on tarsus III 0–1 (usually absent) in both sexes; on tarsus II 0–6 (usually 2–4) in male, 2–6 (usually 3–5) in female; on tarsus I 0–3 (usually 1) in male, 1–3 (usually 2) in female; on tibia absent; in mid leg on tarsus III 0–2 (usually absent in male, one in female); on tarsus II 0–9 (usually 4–6) in male, 2–7 (usually 5–7) in female; on tarsus I 0–5 in male, 1–6 in female (usually 3–5 in both sexes); on tibia 0–5 (usually 0–2) in male, 0–3 (usually absent or one) in female;

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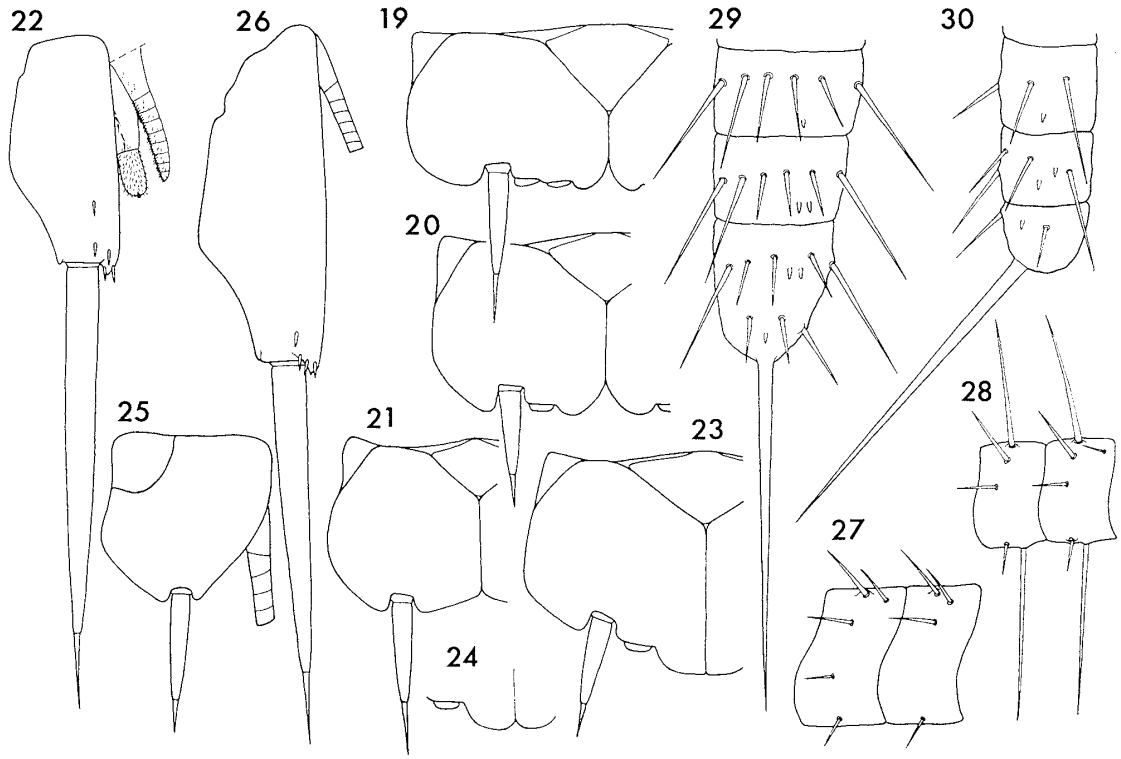

Figs. 19–30. *Pedetontus unimaculatus* sp. nov. —— 19. Urosternum V, male. —— 20. Urosternum VII, male. —— 21. Urosternum VIII, male. —— 22. Urosternum IX, male; with genital appendages. —— 23. Urosternum VII, female; in common cases. —— 24. Inner posterior lobes of urosternum VII, female; in less frequent cases. —— 25. Urosternum VIII, female. —— 26. Urosternum IX, female. —— 27. Basal annuli of anterior gonapophysis, female. —— 28. Median annuli of anterior gonapophysis, female. —— 29. Apical annuli of anterior gonapophysis, female. —— 30. Apical annuli of posterior gonapophysis, female.

in hind leg on tarsus III 0–2 (usually absent in male, one in female); on tarsus II 2–10 (usually 7–10 in male, 6–8 in female); on tarsus I 0–6 in male, 1–6 in female (usually 3–5 in both sexes); on tibia 3–10 (usually 3–6) in male, 1–8 (usually 3–5) in female.

Abdominal segments I, VI and VII with one pair of ventral sacs, II–V with two pairs in both sexes. Posterior angle of 5th median plate approximately 80 degrees. Shape of urosterna V, VII, VIII and IX as shown in Figs. 19–26. Inner posterior lobes of coxites VII of female usually forming a projection of almost continuous outline, but less frequently somewhat separated each other (Fig. 24). Inner posterior portion of coxites IX with 3–8 (usually 4 or 5) spine-like setae. Ratio stylus to coxite: on segment V; 0.55–0.65 in male, 0.45–0.55 in female; on segment VII; 0.45–0.55 in male, 0.35–0.45 in female; on segment VIII, 0.55–0.65 in male, 0.65–0.75 in female; on segment IX, more than 1.1 in male, 0.85–1 in female.

Ovipositor of primary type, slender, its apex approximately at the same level of that of stylus IX. Anterior gonapophyses with 48–67 (usually about 60) annuli.

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Chaetotaxy of gonapophyses as illustrated in Figs. 27–30; basal half of posterior gonapophysis and only at most 4 basal annuli of anterior gonapophysis glabrous. Penis 2/3 as long as IX coxite, slightly surpassing apices of parameres; distal half of penis with slight hypodermal pigmentation. Basal portion of penis twice as long as apical one. Parameres with I+8 or I+7 annuli. Chaetotaxy of penis and paramere as shown in Fig. 22: inner portion of annulated part of paramere with numerous short setae; apical portion of penis with numerous short setae, on undersurface of basal one slightly long setae arranged on the median line.

Type-series. Holotype: ♂, Shiroyama, Shimoda-shi, Shizuoka Pref., August 14, 1979, R. Machida leg. Allotype: ♀, same data as the holotype. Paratypes: 7 ♂♂, 5 ♀♀, July 6, 1978; 1 ♀, July 24, 1978; 2 ♂♂, September 3, 1978; 11 ♂♂, 19 ♀♀, September 27, 1978; 1 ♂, 1 ♀, June 27, 1979; 3 ♂♂, 1 ♀, July 25, 1979; 8 ♂♂, 5 ♀♀, August 14, 1979; 1 ♂, 1 ♀, December 9, 1979. All the paratypes were collected at Shiroyama, Shimoda-shi, Shizuoka Pref., by R. Machida.

The type material is deposited in the collection of the National Science Museum (Nat. Hist.), Tokyo, and twenty Paratypes (13 ♂♂, 7 ♀♀) are preserved in the author's collection.

Type-locality. Shimoda, Shizuoka Pref., Japan.

DISCUSSION

The present species is easily distinguishable from known *Pedetontus* species in Japan and its vicinities as following. *Pedetontus formosanus*, *P. diversicornis* and *P. amamiensis* belong to log-eyed group*, and *P. okajimae* and *P. sauterii* to "wide-eyed group", while the ratio of length to width of eye is 1 in *P. unimaculatus*. Of the other species hitherto described, *P. takahashi*, *P. isshikii* and *P. coreana* are also easily distinguishable from *P. unimaculatus* in the pattern of the pigmentation and annulation of the flagellum. *P. nipponicus* has been the only species described from Central Japan. Although the pattern of the pigmentation of the flagellum of *P. unimaculatus* is similar to that of *P. nipponicus* var. *nikkoana* or var. *meridionalis*, *P. unimaculatus* is distinguished from *P. nipponicus* in chaetotaxy of the maxillary and labial palps of male; in *P. nipponicus* the undersurface of the maxillary palp and the uppersurface of the labial palp are provided with numerous long suberect setae, but in *P. unimaculatus* there are none on the maxillary palp and only a few on the labial palp.

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* The term proposed by Uchida (1960).

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